REMARKS

Reconsideration is respectfully requested in view of any changes to the claims and the remarks herein. Please contact the undersigned to conduct a telephone interview in accordance with MPEP 713.01 to resolve any remaining requirements and/or issues prior to sending another Office Action. Relevant portions of MPEP 713.01 are included on the signature page of this amendment.

Claims 361 to 410 are added. These added claims correspond to the existing claims according to the following table.

Added claim	Corresponding original claim
361	1
362	2
363	6
364	7
365	8
366	9
367	17
368	19
369	23
370	32
371	52
372	53
373	58
374	59
375	65
376	72
377	73
378	75
379	77
380	80
381	82
382	94
383	96
384	97
385	98
386	103

387	104
388	144
389	149
390	150
391	151
392	156
393	187
394	165
395	166
396	170
397	171
398	175
399	176
400	180
401	181
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406	248
407	256
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413	272

The new claims are the same as the corresponding existing claim with the following changes.

"Layer-like" is changed to "comprising a layered characteristic"

"Perovskite like" is changed to "comprising a perovskite characteristic"

"Rare earth like" is changed to "comprising a rare earth characteristic"

"Layer type" is changed to "comprising a layered characteristic"

This change has been made to avoid the formal rejection of the claims under 35 USC 112 for indefiniteness with the terms "Layer-like", "Perovskite like", Rare earth like" and "Layer type". As stated in the prosecution of this and the parent application these are terms well

know to persons of skill in the art. However, as noted by the Examiner the MPEP formally objects to term so this type as indefinite. "Comprising a layered characteristic" is to be understood to mean what a person of skill in the art understands "layer-like" to mean. "Comprising a perovskite characteristic" is to be understood to mean what a person of skill in the art understands "perovskite like" to mean. "Comprising a rare earth characteristic" is to be understood to mean what a person of skill in the art understands "rare earth like" to mean. "Comprising a layered characteristic" is to be understood to mean what a person of skill in the art understands "Layer type" to mean.

Notwithstanding these added claims 361-413 the terms "Layer-like," "Perovskite like," "Rare earth like," and "Layer type" are accepted by the USPTO as definite under 35 USC 112. This is clearly shown by the following list of US Patents which use these terms. This is clear and convincing evidence that the USPTO considers there terms as definite under 35 USC 112. Each patent numbers followed by a representative claim with the identified term in bold and underlined.

i

THE FOLLOWING IS A LIST OF ISSUED US PATENTS FOLLOWED BY A CLAIM THEREFROM USING THE TERM " perovskite-like"

US6559469

1. A transistor comprising a first source/drain, a second source/drain, a channel, a gate electrode, and a layered superlattice material located between said gate electrode and said channel, said layered superlattice material comprising a material having the formula $A1_{w1}+a1\ A2_{w2}+a2 \ldots +Aj_{wj}+aj\ S1_{x1}+s1\ S2_{x2}{}^{s2} \ldots Sk_{xk}+sk\ B1_{y1}+b1\ B2_{y2}+b2 \ldots Bl_{yl}+bl\ Q_z{}^{-q}$, where A1, A2 . . . Aj represent A-site elements in a **perovskite-like** structure, S1, S2 . . . Sk represent superlattice generator elements, B1, B2 . . . Bl represent B-site elements in a perovskite-like structure, Q represents an anion, the superscripts indicate the valences of the respective elements, the subscripts indicate the average number of atoms of the element in the unit cell, and at least w1 and y1 are non-zero.

US5863869

5. The structure of claim 1, where said superconducting film exhibits a **perovskite-like** crystallographic structure.

US5563331

1. A magnetoresistive sensor having a layer system comprising at least two layers, including:

- a first layer; and
- a second layer;

wherein each of said first and second layers comprises a sensor material that possesses a **perovskite-like** crystal structure and exhibits an increased magnetoresistive effect, such that the sensor material of each of said first and second layers has a composition based on $(A_1)_{1-x}$ $(A2)_x$ MnO_z, wherein A1 is a trivalent constituent which is selected from a group of the lanthanides including lanthanum (La), or from yttrium (Y), wherein A2 is a bivalent constituent selected from a group of alkaline-earth metals, or from lead (Pb), and wherein:

- $0.1<=x<=0.9$ and $2.0<=z<=3.5$;

wherein the sensor material of the second layer of the layer system differs, in terms of proportion and/or element of at least one of its constituents A1, A2, Mn, and O, from the sensor material of the first layer of the layer system, a temperature correlation of the electrical resistance of the sensor materials of said first and second layer being different and compensating at least partly for one another so that the temperature correlation of the electrical resistance of the layer system is reduced with respect to a temperature correlation of the electrical resistance of each individual layer.

US6582972

1. A method of fabricating a thin film of layered superlattice material in an integrated circuit comprising the steps of:

- providing a precursor containing metal moieties in effective amounts for forming a

layered superlattice material upon heating said precursor;

- wherein the layered superlattice material may be represented under the formula: $A1_{w1}$+a1 $A2_{w2}$+a2. . . Aj_{wj}+aj $S1_{x1}$+s1 $S2_{x2}$+s2. . . Sk_{xk}+sk $B1_{y1}$+b1 $B2_{y2}$+b2. . . Bl_{yl}+bl Qz^{-q}

where A1, A2 . . . Aj represents A-site elements in the perovskite-like structure, S1, S2 . . . Sk represent superlattice generator elements; B1, B2 . . . Bl represent B-site elements in the **perovskite-like** structure; and Q represents an anion;

- applying said precursor to a substrate to form a precursor thin film; and exposing said precursor thin film to a substance selected from the group consisting of: (a) a strong oxidizing agent; and (b) oxygen under pressure; to from a metal oxide thin film.

US6362503

US6638895

1. A method of fabricating high aspect ratio ceramic structures, comprising providing a perovskite or **perovskite-like** crystalline material; exposing a selected portion of the crystalline material to a high energy ion beam for a time sufficient to cause the crystalline material contacted by the ion beam to have substantially parallel columnar defects, and thereafter etching selected portions of the material having substantially parallel columnar defects leaving material with and without substantially parallel columnar defects in a predetermined shape having high aspect ratios of not less than 2 to 1.

US4887186

1. A multi-layered dielectric element which comprises a multi-layered unit including a plurality of dielectric layers formed of a perovskite oxide capable of sintering at a temperature of from 900° to 1100° C. and a plurality of internal electrode layers which are, respectively, sandwiched between adjacent dielectric layers so that the respective internal electrode layers have exposed portions which allow contact with external electrodes, said internal electrodes layers being each made of at least one conductive composite oxide of La, Ba and Cu having a perovskite-like structure wherein the atomic

ratios of the metals are such that (La+Ba)/Cu=1 and La/Ba=4, or at least one conductive composite oxide of La, Sr and Cu having a **perovskite-like** structure wherein the atomic ratios of the metals are such that (La+Sr)/Cu=1 and La/Sr=3 or 4, said unit being sintered at a temperature of from 900° to 1100° C.

US6635603

7. A crystalline single phase composition having a **Perovskite-like** structure, exhibiting 0 electrical resistance at a temperature of 72° K. or above, having the formula $M'M_2 Cu_3 O_{9-d}$ wherein M' is Y, La, Eu, or Lu; M is Ba or a mixture of Ba and Sr; and d is at least 1 and is a value that provides the composition with 0 electrical resistance at a temperature of 72° K. or above.

US5739086

1. A method of preparing a biaxially textured laminate article comprising the steps of:

- a. providing a substrate having a biaxially textured Ag surface;
- b. depositing onto said surface of said substrate an epitaxial buffer template layer of ReBCO using a pulsed laser deposition technique at a temperature in the range of about 600° C. to about 700° C., and at an oxygen pressure in the range of about 50 mTorr to about 300 mTorr; and,
- c. depositing onto said buffer template layer another epitaxial layer of **perovskite-like** material using a pulsed laser deposition technique.

US5648114

14. A method of fabricating an integrated circuit including a ferroelectric layered superlattice material containing at least three different metals, said layered superlattice material having alternating ferroelectric and non-ferroelectric layers, said method comprising the steps of:

- providing a substrate;
- depositing a thin film on said substrate utilizing a chemical vapor deposition process, said thin film including said at least three different metals in effective

amounts for yielding said ferroelectric layered superlattice material having the formula $A1_{w1}$+a1 $A2_{w2}$+a2 . . . Aj_{wj}+aj $S1_{x1}$+s1 $S2_{x2}$+s2 . . . Sk_{xk}+sk $B1_{y1}$+b1 $B2_{y2}$+b2 . . . Bl_{yl}+bl Q_z^{-2}, where A1, A2 . . . Aj represent A-site elements in a perovskite-like structure, S1, S2 . . . Sk represent superlattice generator elements, B1, B2 . . . Bl represent B-site elements in said perovskite-like structure, Q represents an anion, the superscripts indicate valences of the respective elements, the subscripts indicate an average number of atoms of the element in the unit cell, and at least w1 and y1 are non-zero, and wherein said A-site element comprises one or more elements from a group consisting of strontium, calcium, barium, and lead, said B-site element comprises one or more elements from a group consisting of titanium, tantalum, hafnium, tungsten, niobium zirconium, said superlattice generator element comprises one or more elements from a group consisting of bismuth, scandium, yttrium, lanthanum, antimony, chromium, and thallium, and said anion comprises an element from a group consisting of oxygen, fluorine, chlorine and hybrids thereof; and

- heating said thin film to crystallize it into a layer of said layered superlattice material less than 1 micron thick.

US5519234

2. A ferroelectric memory as in claim 1 wherein said ferroelectric layered superlattice material comprises a material having the formula $A1_{w1}$+a1 $A2_{w2}$+a2 . . . Aj_{wj}+aj $S1_{x1}^{-s1}$ $S2_{x2}$+s2 . . . Sk_{xk}+sk $B1_{y1}$+b1 $B2_{y2}$+b2 . . . Bl_{yl}+bl Q_z^{-2}, where A1, A2 . . . Aj represent A-site elements in a perovskite-like structure, S1, S2 . . . Sk represent superlattice generator elements, B1, B2 . . . Bl represent B-site elements in a **perovskite-like** structure, Q represents an anion, the superscripts indicate the valences of the respective elements, the subscripts indicate the average number of atoms of the element in the unit cell, and at least w1 and y1 are non-zero.

US5389603

1. An article comprising a superconductive element comprising at least one

superconductive material having a **perovskite-like** crystal structure and nominal formula (Pb_2 A_2 Cu')BCu_2 O_8+.delta. with (A selected from the group consisting of Sr, Ba, Sr and Ba, Sr and Ca, and Sr, Ba and Ca; Cu' is selected from the group consisting of Cu, Ag, and Cu and Ag;) (B is selected from the group consisting of one or more RE and Ca, one or more RE and Sr, and one or more RE and Ca and Sr; where RE is Y and the elements of atomic number 57-71); wherein 0<=.delta.<=1; wherein divergence of the composition of the superconductive material from the nominal formula amounts of Pb, A, Cu', B, and/or Cu is at most about 10 atomic %; wherein associated with the crystal structure is an ab-plane, the crystal structure comprising a central crystal plane that comprises Cu', and further comprising two Pb- and oxygen-containing crystal planes sandwiching the central plane, with all three said planes being parallel to the ab- plane; and wherein the composition is selected such that the superconductive material has a transition temperature of at least about 30K.

US4980333

1. A composition comprising a **perovskite-related** layered oxide containing an interspathic polymeric oxide of an element selected from Groups IB, IIB, IIIA, IIIB, IVA, IVB, VA, VB, VIA, VIIA and VIIIA of the Periodic Table.

US4975415

3. The method of claim 1 wherein the particles have a spinel or **perovskite-like** structure comprising:

A_x A'_{1-x} B_y B'_{2-y} D_z O_q

wherein:

- A and A' are each independently selected from lanthanum, yttrium, samarium, europium, gadolinium, dysprosium, holmium or mixtures thereof;
- B and B' are each independently selected from barium, strontium-calcium, barium-strontium or barium-calcium;
- D is selected from platinum, copper, silver, tin or mixtures thereof;
    - x is about 1;

- y is about 2;
- z is about 3; and
- q is 7-d, where d is between 0 and 1.

US6372519

5. A method of making a semiconductor device, comprising:
   - providing an oxide containing substrate having a titanium layer formed thereon;
   - exposing at least a portion of said titanium layer to **perovskite-type** metals in a manner that cause the perovskite-type metals to become incorporated into the titanium layer; and
   - heating the oxide containing substrate and titanium layer incorporated with the perovskite-type metals such that titanium in the titanium layer reacts with the oxide containing substrate to reduce the oxide containing substrate and to form a metal containing layer.

58. A method of making a semiconductor device, comprising:
   - forming an overlayer with a plurality of metals that react to form **perovskite-like** structures and at least one of the metals forms a metal silicide in a thermal reaction with silicon dioxide, wherein the overlayer is on and in contact with a silicon dioxide containing assembly on a substrate;
   - removing preselected portions of the overlayer; and
   - heating the overlayer.

US6337991

1. A temperature sensor structure comprising a single crystal substrate;
   - a buffer layer comprising CeO_2 deposited over the substrate and YBCO deposited over the CeO_2 buffer layer; and
   - an epitaxial thin film of an oxide material having a **perovskite-like** structure which undergoes a ferromagnetic phase transition.

US6320213

- 7. A semiconductor device, in accordance with claim 1, wherein:
  - the first and second capacitor electrodes are metallic materials selected from a group of materials including aluminum group metals, tungsten group metals, platinum group metals, palladium group metals, ruthenium group metals, iridium group metals, rhenium group metals, rhodium group metals, gold group metals, silver group metals, copper group metals, conductive metal compounds, conductive **perovskite like** materials, reactive metals, doped silicon, and doped germanium.

USRE36814 This patent is a reissue of patent US5661112

US5916700

1. A solid oxide fuel cell air electrode composition comprising a **perovskite-like** crystal structure of the formula ABO_3, wherein:

- (a) the A-site consists of La, Ca, Ce and at least one lanthanide selected from the group consisting of Sm, Gd, Dy, Er, Y and Nd;
- (b) the B-site consists of Mn; and
- (c) the ration of A:B is from about 1:1 to about 1.02:1; and Ce is present from about 0.5 to about 2 atomic percent.

US5661112 This patent was reissued on Aug. 8 , 2000 as patent USRE36814

1. A superconductor comprising an A--B--Cu oxide film deposited on a metal film formed on a substrate, said A--B--Cu oxide containing elements A and B and Cu and O, the molar ratio of said elements A and B and Cu being in a range of *[Figure]* wherein the element A is one element selected from Tl, Bi, Pb, Y and lanthanum series elements (atomic number: 57-71), and the element B is one element selected from the Group IIa elements; and said metal film being a transition metal element selected from Pt, Au, Ag, Pd, Ni and Ti the composition A--B--Cu--O of said oxide film being in the form of layered **perovskite-like** structure.

US5340796

1. An article comprising material **perovskite-like** structure and of nominal composition $X_{2}+x\ M_{4-x}\ Cu_{3}\ O_{10}+0.5\pm$.delta., where [x=p/q<0.4, and p and q are positive integers] 0<=x0.4, X is Bi and Pb, M is Ca and Sr, the Pb/Bi ratio is at most 0.5, and the Ca/Sr ratio and the value of .delta. are selected such that said material manifests superconductivity at a temperature of 77K or above.

US5213908

9. The electrochemical cell according to claim 8, wherein said metal oxide is a **perovskite-like** or a pyrochlore-like structure.

US5122505

8. The process of claim 6 wherein the particles have a spinel, perovskite, or **perovskite-like** structure comprising:

$A_{x}\ A'_{1-x}\ B_{y}\ B'_{2-y}\ D_{z}\ O_{q}$

wherein:

- A and A' are each independently selected from lanthanum, yttrium, samarium, europium, gadolinium, dysprosium, holmium or mixtures thereof;
- B and B' are each independently selected from barium, strontium-calcium, barium-strontium or barium-calcium;
- D is selected from platinum, copper, silver, tin or mixtures thereof;
- x is about 1;
- y is about 2;
- z is about 3; and
- q is 7-d, where d is between 0 and 0.7.

US5063202

1. The compound $YBa_2 Cu_4 O_{10}$. wherein is such that said compound has a **perovskite-like** unit cell structure of approximately the following dimensions a=3.8.ANG., b=3.9.ANG., and c=13.55.ANG..

US4933317

1. Superconducting element comprising at least one superconductive composition, associated with the superconductive composition being a **perovskite-like** crystal structure comprising two inequivalent lattice sites (to be referred to as the A-site and B-site, respectively), the superconductive composition having the formula $ABiO_3$..delta., wherein A is $Ba_{1-x} M_x$, where M is at least one monovalent element selected from the group consisting of K and Rb, with A and Bi occupying essentially only A-sites and B-sites, respectively, and wherein 0<=.delta..ltorsim.0.1, and x has a value in the approximate range 0.2-0.24.

US4921834

1. A process for preparing an oxide-superconductor which comprises preparing a starting material composed of at least one member selected from among a polycrystal of an La-M-Cu oxide system or a Y-M-Cu oxide system (wherein M is Sr, Ba or Ca) which is a composite oxide of a $K_2 NiF_4$ crystalline structure or a **perovskite-like** crystalline structure having a copper ion in the body center of the oxygen octahedron and a mixture having a stoichiometric composition ratio similar to that of the constituent elements of said composite oxide and a flux comprised of CuO having a melting point lower than that of said composite oxide, dissolving said starting material in said flux while maintaining the dissolution temperature at a value which is lower than the melting point of said composite oxide and causes said composite oxide to be dissolved in said flux, and growing a single crystal of said composite oxide from the resulting saturated flux solution which have been prepared by dissolution of said starting material.

US4831006

10. The method of claim 1 wherein said layered metal chalcogenide is a **perovskite-related** layered oxide

11. The method of claim 10 wherein said perovskite-related oxide is represented by the formula M_m [A_{n-1} B_n $O_{3n=1}$] wherein M is a charge-balancing interspathic cation, [A_{n-1} B_n O_{3n+1}] represents a **perovskite-like** layer, A is one or more metal atoms capable of occupying 12-coordinate sites, B is a metal atom capable of occupying 6-coordinate sites, m is greater than zero, n is greater than or equal to 2 and each layer comprises a cubic arrangement or corner-shared BO_6 octahedra with A occupying a 12-coordinated site in the center of each cube.

US4596750 Published / Filed: **1986-06-24 / 1985-03-15**

7. A support tube according to claim 6 wherein said coating is electronically conductive and comprises a solid solution having a **perovskite-like** crystal structure that contains manganese.

US4001371

Published / Filed: **1977-01-04 / 1975-03-06**

1. In a catalytic process for the removal from a gas flow of at least one material from the group, carbon monoxide, hydrocarbons and nitrogen oxides of the formula NO_x, at elevated temperatures, the improvement comprising contacting said gas flow with a catalyst containing an active ingredient consisting essentially of a **perovskite-like** manganite of at least one rare earth element selected from the group consisting of La, Pr, and Nd in which the said rare earth element is partially replaced, in that the said manganite is of a composition represented by the atom formula RE_{1-x} M_x MnO_3 in which RE is at least one element selected from the group consisting of La, Pr, and Nd; M is at least one element selected from the group consisting of Na, K, and Rb in which x is from 0.1 to 0.4 and in which the amount of any of the indicated cations may be reduced by up to about 15 atoms percent to accommodate vacancy structures.

US3884837

Published / Filed: **1975-05-20 / 1973-07-02**

1. Catalyst containing an active ingredient consisting essentially of a **perovskite-like** manganite of at least one rare earth element selected from the group consisting of La, Pr and Nd in which the said rare earth element is partially replaced, characterized in that the said manganite is of a composition represented by the atom formula $RE_{1-x}\ M_x\ MnO_3$ in which RE is at least one element selected from the group consisting of La, Pr, and Nd; M is at least one element selected from the group consisting of Na, K, and Rb, in which x is from 0.1 to 0.4 and in which the amount of any of the indicated cations may be reduced by up to about 15 atom percent to accommodate vacancy structures.

ii

THE FOLLOWING IS A LIST OF ISSUED US PATENTS FOLLOWED BY A CLAIM THEREFROM USING THE TERM "layered type"

US6217158

1. A **layered type** ink jet recording head comprising:
   - at least one actuator unit and at least one ink supply unit coupled together;
   - said actuator unit including:
     - an elastic plate, made of piezoelectric material, having a first common electrode formed on a first side of said elastic plate and a at least one drive electrode formed in a deformable region on a second side of said elastic plate;
     - a spacer having a first side which is directly sealingly covered by said elastic plate; and a second covering member which sealingly covers a second side of said spacer, said spacer having a hollow interior, said spacer along with said elastic plate and said second covering member, defining a pressure generating chamber, said drive electrode being disposed within said deformable region and above said pressure generating chamber, said second covering member including a first through hole which connects said

pressure generating chamber to a first portion of said ink supply unit and a second through-hole which connects said pressure generating chamber to a second portion of said ink supply unit;

- wherein said first portion of said ink supply unit includes a common ink chamber and an ink supply port which connects said first through hole to said common ink chamber;
- wherein said second portion of said ink supply unit includes a discharge orifice and an ink discharge through-hole which connects said second through-hole to said discharge orifice of said second portion which receives ink from said pressure generating chamber in order to discharge an ink droplet, said ink originating in said common ink chamber; and
- wherein said deformable region of said elastic plate includes at least one curved portion which faces said pressure generating chamber.

US5912526

1. A **layered-type** piezoelectric element for producing a pressure fluctuation within a cavity of an ink jet print head to eject the ink from the cavity, the **layered-type** piezoelectric element comprising:

- piezoelectric ceramic layers; and
- internal electrode layers stacked in a stacked direction alternately with said piezoelectric ceramic layers to form a stacked body, the internal electrode layers including an odd-numbered electrode layer group and an even-numbered electrode layer group;
- wherein elongated holes that are elongated in an elongation direction perpendicular to the stacked direction extend in the stacked direction through a central portion of the stacked body, the elongated holes defining therebetween a plurality of actuator portions that extend in the elongation direction and that are attached at both ends in the elongation direction to other portions of the stacked body, portions of each layer of the odd-numbered electrode layer group being in opposition in the stacked direction with portions of each layer of the

even-numbered electrode layer group at least at the actuator portions of the stacked body.

US6320262

2. A semiconductor device comprising:

- a bonding pad;
- a first metal layer including a plurality of separate sections each individually connected to said bonding pad;
- a second metal layer including a single section connected to a circuit block; and
- plural aluminum wirings respectively connected between said plurality of separate sections of said first metal layer and said single section of said second metal layer,
- wherein said first metal layer and said second metal layer are formed in respective layers of a **multiple-layered type** device and wherein said plural aluminum wirings have a length equal to or shorter than Blech Length.

US5248572

1. A **layered-type** manganese dry battery comprising a plurality of unit cells stacked one above another to form a cell stack, each unit cell comprising:

- a positive electrode composition, formed in a pellet shape, consisting essentially of manganese dioxide, conductive material, and electrolyte;
- a separator of a cup-like shape surrounding the positive electrode composition, said separator absorbing and holding the electrolyte by itself; and
- a zinc-carbon bonded electrode made of a conductive carbon coat integrally bonded to a flat zinc negative electrode facing the positive electrode composition so as to sandwich the separator therebetween, the zinc-carbon bonded electrode being provided with protrusions on the surface of the conductive carbon coat formed on the outer surface of the flat zinc negative electrode, wherein the protrusions formed on the surface of the conductive carbon coat have a height of 0.05 to 0.15 mm.

US5173384

1. A **layered-type** organic electrophotographic photoreceptor in which a charge generating layer containing organic charge generating material and a charge transporting layer containing organic charge transporting material are constructed on an electroconductive support, characterized in that the photoreceptor has a value n of not greater than 0.5 in the following equation (1) of an approximated straight line obtained by plotting both the electric field of from 1×10^5 V/cm to 5×10^5 V/cm and the quantum yield in a logarithmic scale:

$n=n_0 E^n$ (1)

where n represents a quantum yield as the whole photoreceptor, E represents an electric field of from 1×10^5 V/cm to 5×10^5 V/cm, and n_0 represents a constant determined by said approximation, and specific to the photoreceptor, that a film thickness of said charge transporting layer is from about 30 to 60 μm (micrometer) and that said organic charge generating material comprises at least one material selected from the group consisting of azo dyes, phthalocyanine dyes, quinacridone dyes, perylene dyes, polycyclic quinone dyes, indigo dyes, benzoimidazole dyes, pyrylium salts, thiapyrylium salts, and squarylium salt pigments.

US5131072

- 37. A neuron computer, comprising:
    - an input layer; and
    - at least one intermediate layer comprising an analog neuron processor operatively connected to said input layer; and
    - at least one output layer operatively connected to said analog neuron processor, thereby forming a **layered type** network.

US5044732

1. A liquid-crystal display device comprising:
    - a **double-layered-type** liquid-crystal cell that is composed of a first cell layer and a second cell layer, said cell containing liquid-crystal molecules with a twisted

nematic orientation therein and

- a voltage-applying means in one of the first and second cell layers,
- wherein the angle of twist of the liquid-crystal molecules in the first cell layer is opposite to that of twist of the liquid-crystal molecules in the second cell layer, said angle of twist of the liquid-crystal molecules in each of the first and second cell layers being in the range of 180° to 360°, and the orientation of the liquid-crystal molecules in the first cell layer in the vicinity of the second cell layer is at right angles to that of the liquid-crystal molecules in the second cell layer in the vicinity of the first cell layer, wherein
  .DELTA.n_2 d_2 <0.85.DELTA.n_1 d_1,
- wherein the relationship between the pitch p of twist of the liquid-crystal molecules in the cell layer that has the voltage-applying means therein and the thickness d of the liquid-crystal layer in the said cell layer is as follows:
  .theta./2.pi.-1/4
- wherein .theta. is the angle of twist of the liquid-crystal molecules.

US6667110

15. A cord according to claim 13, of the **layered type**, with a structure (X+Y+Z), consisting of a core of X wire(s) surrounded by at least a first layer of Y wires, itself possibly surrounded by a second layer of Z wires, preferably with X ranging from 1 to 4, Y from 3 to 12, and Z from 8 to 20, depending on the case.

US5869846

5. The superconducting junction device according to claim 1, wherein Josephson currents of the Josephson junctions are coupled in anti-phase and the Josepson junctions are connected in series by adjacently disposing two **layered-type** Josephson junctions across a coupling portion and each layered-type Josephson junction is formed by laminated-type a lower electrode, a barrier layer of a dielectric or a conductor, and an upper electrode.

US5825080

- 5. A **multi-layered type** semiconductor apparatus comprising: a plurality of semiconductor devices, each of said semiconductor devices formed on a semiconductor substrate, said plurality of semiconductor devices laminated in a direction of thickness of each of said semiconductor substrates,
    - wherein each of said plurality of semiconductor devices comprises:
        - said semiconductor substrate having two surfaces opposing to each other and having a circuit including a transistor having a plurality of electrodes, said circuit formed on at least one of said two surfaces;
        - insulating films respectively formed on said two surfaces of said semiconductor substrate;
        - connecting electrodes formed on a surface of said insulating film and electrically connected to said circuit;
        - a surface grounding conductor formed on a surface of each of said insulating films so as to cover the surface of each of said insulating films except for portions where said connecting electrodes are formed;
        - through holes respectively formed in said insulating films so as to penetrate said insulating films in a direction of thickness thereof;
        - through hole conductors respectively formed in said through holes; and
        - an internal grounding conductor formed on the surface on which said circuit is formed,
        - wherein said **multi-layered type** semiconductor apparatus further comprises:
            - connection means for electrically connecting the surface grounding conductors of adjoining ones of said semiconductor devices with each other,
            - wherein one electrode out of said plurality of electrodes of said transistor is electrically connected to said surface grounding conductor by way of said internal grounding conductor and said through hole conductor,

- wherein each of said through hole conductor and said surface grounding conductor has a thickness greater than a thickness of said internal grounding conductor, and
- wherein the thickness of said through hole conductors and said surface grounding conductor efficiently transmits heat from the transistor to outside the semiconductor device.

US5416888

- 14. A neural network of a **multi-layered type** for a fuzzy reasoning in which an if-part of a fuzzy rule is expressed by a membership function and a then-part of the fuzzy rule is expressed by a linear expression, the network comprising:
  - input means for inputting data;
  - a first neural network, connected to the input means, having first neurons for receiving if-part variables of all fuzzy rules and calculating if-part membership values of all the fuzzy rules;
  - a second neural network formed of second neurons, connected to the first neurons with a given weight of connection based on the if-part of the fuzzy rules, for calculating, as a truth value of a premise of each fuzzy rule, a product of the if-part membership values for all the if-part variables; and
  - a third neural network, connected to the second neural network with a given weight of connection based on a then-part of the fuzzy rule, the third neural network having a neuron for calculating a first sum of the truth value of the premise of all the fuzzy rules, a neuron for calculating a second sum of a product of the truth values of the premise of all the fuzzy rules and the-part outputs of all the fuzzy rules, and a neuron for calculating a division of the second sum by the first sum to obtain a quotient as an inferential result;
  - output means connected to the third neural network, for outputting said quotient as output data; and
  - training means for causing said neural network for a fuzzy reasoning to perform training to decrease an error such that a weight of connection between the first

neural network and said input means and a weight of connection between the second neural network and the third neural network are changed, and a weight of connection between the second neural network and the first neural network is not changed.

US5318114

1. A **multi-layered type** heat exchanger for a refrigerant circuit comprising:
   - a plurality of substantially parallel flat tubes;
   - a partition wall mounted in each flat tube for dividing its interior into two fluid passages;
   - a plurality of fin units disposed between said plurality of flat tubes;
   - a header pipe having a plurality of slits for receiving first ends of said flat tubes;
   - at least one partition wall mounted within said header pipe to divide the interior thereof into at least two chambers, said chambers being in fluid communication with different ones of said fluid passages in each of said flat tubes; and
   - sealing means mounted on second ends of said flat tubes for sealing the second ends of said flat tubes so that refrigerant fluid flows from one of said chambers of said header pipe to one of said fluid passages in each of said flat tubes to the other of said fluid passages to the other of said chambers in said header pipe
   - wherein said sealing means comprises a plurality of seal members each having a curved shape projection for facilitating flow of a refrigerant fluid.

US5155608

1. A liquid-crystal display device comprising:
   - a **multi-layered-type** liquid crystal cell that is composed of first and second cell layers, each said cell layer containing liquid crystal molecules with a twisted nematic orientation therein,
   - in the absence of an electric field the liquid/crystal molecules in the first and second cell layers assuming opposite direction twists substantially in the ranges of 180° to 360° and 150° to 390°, respectively; the orientations of the most proximate

liquid crystal molecules in the first and second cell layers being at an angle of 70° to 150° relative to each other; the difference between the angle of twist of the liquid crystal molecules in the first cell layer and the angle of twist of the liquid/crystal molecules of the second cell layer being in the range of 30° to 90°; the relationship between the product .DELTA.n_1 .multidot.d_1 of the birefringence .DELTA.n_1 and the thickness d_1 of the first liquid crystal cell layer and the product .DELTA.n_2 .multidot.d_2 of the birefringence .DELTA.n_2 and the thickness d_2 of the second liquid crystal cell layer being represented by the following inequality:

$0.7<.DELTA.n_1 .multidot.d_1 /.DELTA.n_2 .multidot.d_2 <1.4$

- the dependence of the value .DELTA.n_1 on the wavelength of light being larger than that of the value of .DELTA.n_2 on the wavelength of light.

US4545651

3. The optical system according to claim 2 wherein said dielectric film is a **multi-layered type** which is prepared by laminating a plurality of dielectric layers.

US6329740

8. The piezoelectric/electrostrictive device according to claim 1, wherein the piezoelectric/electrostrictive element is a **layered type** piezoelectric/electrostrictive element in which a lower electrode, a piezoelectric/electrostrictive film, and an upper electrode are laminated.

US6322466

9. The chain-belt transmission of claim 5, wherein the damper insert is of a **layered type** of construction.

US6132914

4. The electrophotographic photoconductor as claimed in claim 1, wherein said photoconductive layer is of a **single-layered type**.

US6027845

1. A **layered-type** electrophotographic photoreceptor comprising an electrically conductive support having thereon a charge generating layer, comprising a charge generating organic material, and an electron transportable carrier transport layer, comprising an electron transport organic material and a binder, in this order, wherein said electron transport material aggregates mutually in said binder whereby a new absorption component is generated at a wavelength which is at least 20 nm longer than a maximum absorption wavelength of said electron transport material is molecularly dispersed of said electron transportable carrier transport layer, and a weight ratio of said electron transport material to said binder of said electron transportable carrier transport layer ranges from 25/100 to 200/100.

US5853902

19. A metal honeycomb core body as claimed in claim 1 or **Error! Hyperlink reference not valid.**, wherein said metal honeycomb core body is any type selected from rolling type, **multi-layered type**, radial type, S-shaped type, conjugated-comma type, and X-lap type.

US5492784

1. A positively-chargeable **single-layered type** organic electrophotographic photoconductor comprising an electroconductive support and an organic single-layered photoconductive layer comprising a charge generating material, an organic positive hole transporting material and an organic acceptor compound which are dispersed in a matrix binder agent, with the relationship of the oxidation potential (E_{ox}) of said charge generating material<=the oxidation potential (E_{ox}) of said organic positive hole transporting material being satisfied,

- wherein the relationship of the reduction potential (E_{red}) of said charge generating material<=the reduction potential (E_{red}) of said organic acceptor compound is satisfied, and

- said charge generating material is a p-type (positive-type) azo pigment.

US5449581

11. A **double-layered type** electrophotographic photoreceptor having a charge generation layer containing the phthalocyanine composition according to claim 1 as a charge generation substance and a charge transport layer containing a benzidine derivative represented by the formula (I): *[Figure]* wherein R^1 and R^2 each independently represent a hydrogen atom, a halogen atom, an alkyl group, an alkoxy group, an aryl group, a fluoroalkyl group or a fluoroalkoxy group, two R^3 s each independently represent a hydrogen atom or an alkyl group, Ar^1 and Ar^2 each independently represent an aryl group, and p, q, r and s each independently represent an integer of 0 to 5.

US5304445

3. A **double-layered type** electrophotographic photoreceptor which comprises a charge generation layer containing the phthalocyanine composition according to claim 1 as a charge generating material, and a charge transport layer containing a benzidine derivative represented by the following formula (I): *[Figure]* wherein R_1 and R_2 each independently represents a hydrogen atom, a halogen atom, an alkyl group, an alkoxy group, an aryl group, a fluoroalkyl group or a fluoroalkoxy group, two R_3 s each independently represents a hydrogen atom or an alkyl group, Ar_1 and Ar_2 each independently represents an aryl group, and k, l, m, and n each independently represents an integer of 0 to 5.

US5247374

6. A **layered type** white and black super-twisted nematic liquid crystal display device comprising:

- a driving cell and a compensating cell formed in a layered structure;
- a common heater interposed between said driving cell and said compensating cell for simultaneously heating both said driving cell and said compensating cell; and
- wherein said heater comprises a single electrically conductive thin film.

US5187584

3. A device according to claim 1, in which said light-receiving sections comprise an amorphous silicon **layered type** charge-coupled devices.

US5171651

1. A **double-layered type** electrophotographic photoreceptor which comprises an electroconductive support and a carrier generation layer containing a pigment or a dye as a carrier generation material and a carrier transport layer which are provided on said support, wherein the carrier transport layer contains an organic low molecular weight carrier transport material, a binder resin, a hydroquinone compound represented by the following formula (II): *[Figure]* wherein R^7, R^8, R^9 and R^{10} each represents a hydrogen atom, a halogen atom, an alkyl group, an aryl group, an alkoxy group, a carbamoyl group or an alkylthio group, and a compound represented by the following formula (III): *[Figure]* wherein R^{11}, R^{12}, R^{13} and R^{14} each represents a hydrogen atom, a hydroxyl group, an alkyl group or an alkoxy group with a proviso that at least one of R^{11} -R^{14} is hydroxyl group, R^{15} and R^{16} each represents a hydrogen atom, an alkyl group or an alkenyl group and Z represents a group of atoms necessary to form a 2H-chromene skeleton, chroman skeleton or dihydrobenzofuran skeleton together with the benzene ring in the formula and the group of atoms may be further substituted.

US5148299

1. A **double-layered type** super-twisted nematic liquid crystal display device, comprising:

- a display cell;
- a compensating cell laminated on said display cell with a spacer interposed therebetween to define a space between said display cell and said compensating cell;
- said compensating cell comprising at least one glass substrate having opposed surfaces, and said compensating cell being arranged on a front surface side of said display device;

- said display cell being arranged on a rear surface side of said display device;
- illuminating means arranged on the rear surface side of said display cell for illuminating said display cell, said illuminating means comprising a light source and a reflector for reflecting light from said light source toward said display cell;
- a transparent electrode formed over the whole of at least one of said opposed surfaces of said at least one glass substrate of said compensating cell; and
- connecting means for connecting said transparent electrode to ground potential.

US5090794

1. A method for driving a **multi-layered-type** liquid crystal display device which includes stacked plural cell layers, each plural cell layer containing liquid crystal molecules twisted between two transparent substrates so as to have a large birefringence .DELTA.n_x, a thickness d_x, a twist angle .theta.$_x$, wherein x, for birefringence, thickness and twist angle, is an integer corresponding to the cell layer, and having a varying light transmittance varying responsive to a voltage applied thereto,

- said method comprising the steps of:
- determining voltages to be applied to each of the plural cell layers so as to vary the light transmittances of the individual cell layers to pass a predetermined color light, and
- driving each of the plural cell layers by applying said determined voltages to corresponding ones of each of the plural cell layers to display an image having the predetermined color light on the liquid crystal display device due to the transmittance of each of the plural cell layers varying responsive to the determined voltages applied thereto.

US4952029

1. A liquid crystal display device comprising:

- a **double-layered-type** liquid crystal cell which is composed of a first cell layer and a second cell layer, said liquid crystal cell containing liquid crystal molecules with a twisted nematic orientation therein; and

- voltage applying means for applying voltage to said first cell layer;
- wherein the twist angle of the liquid crystal in said first cell layer is opposite to that of the liquid crystal in said second cell layer, the orientation of the liquid crystal molecules in said first cell layer in the vicinity of said second cell layer is orthongonal to that of the liquid crystal molecules in said second cell layer in the vicinity of said first cell layer, and the dependency of the birefringence on the wavelength of light of said first cell layer is larger than that of said second cell layer such that when voltage is applied to said first cell layer, the dependency of the birefringence of the first cell layer is lowered to become approximately equal to that of the second cell layer.

US4407452

2. The apparatus of **Error! Hyperlink reference not valid.**, wherein said slot means are so arranged that the pressure and flow speed of the cold gas are adapted to the pressure and flow speed of the hot gas for providing a laminar, **layered type** gas flow just downstream of said slot means and upstream of said nozzle neck.

US3721849

1. A cathode ray tube for presenting a color display of differing persistence comprising:
   - an envelope having a viewing area with a screen supporting surface related thereto;
   - electron gun means oriented within said envelope and structured to generate and project defined low and high velocity electron beams to impinge said screen supporting surface; and
   - a **layered type** dual persistence image display screen formed on said screen supporting surface, said screen comprising a first phosphor layer disposed directly on said supporting surface, said first phosphor layer being formed of a first phosphor material responsive to optical excitation and exhibiting a phosphorescence of substantially long persistence; a second phosphor layer uniformly disposed over said first layer, said second phosphor layer being formed

of a second phosphor material to furnish said optical excitation for said first phosphor material, said second phosphor being an electron responsive material whereof each phosphor particle has a modified peripheral non-excitable portion in the form of an integral electron energy absorbing barrier of predetermined depth to effect an energy threshold surrounding the unmodified core of the particle and limiting the excitation thereof to said high velocity electron beam, said second phosphor layer being disposed to a thickness sufficient to substantially totally absorb the energy of said high velocity electron beam; and a third phosphor layer uniformly applied over said second phosphor layer, and being of a thickness less than that of said second layer, said third phosphor material being responsive to both low and high velocity electron excitation and exhibiting a phosphorescence of substantially short persistence, said third phosphor material having a peak wavelength of spectral energy emission at least equaling that of the phosphor material of said first screen layer.

THE FOLLOWING IS A LIST OF ISSUED US PATENTS FOLLOWED BY A CLAIM THEREFROM USING THE TERM "rare earth-like element"

(("rare earth like") <in> CLAIMS)

US5863869

1. A multilayer structure exhibiting high superconducting T_c, comprising:
   - a substrate,
   - a film formed on said substrate, said film being a superconductive copper oxide having a superconducting transition temperature T_c in excess of 70° K and exhibiting superconductivity at temperatures in excess of 40° K, said films also including a rare earth or **rare earth-like element** selected from the group consisting of a lanthanide element, Y, S_c, and La that is at least partially substituted by an alkaline earth element, said films being continuous and smooth and having

therein a superconducting cooper oxide phase said substrate being a material which does not react with said film to adversely affect the superconductive properties of said film.

US5162298

5. The device ... where said superconducting material includes an atom selected from the group consisting of rare earth atoms and **rare earth-like** atoms.

iv

THE FOLLOWING IS A LIST OF ISSUED US PATENTS FOLLOWED BY A CLAIM THEREFROM USING THE TERM "layer like"

US6645833

1. A method of manufacturing a **layer-like** structure in which a cavity exhibiting or porous layer is produced on a crystalline semiconductor substrate and wherein the layer-like structure is subsequently provided on the cavity exhibiting or porous layer and is subsequently separated from the substrate using the cavity exhibiting or porous layer as a position of intended separation, the surface of the substrate being structured prior to the generation of the cavity exhibiting or porous layer and the structure of the surface of the substrate being preserved after separation of said layer-like structure from the cavity exhibiting or porous layer.

US4214255

- 8. The gate turn-off semiconductor triac device recited in ... wherein:
    - said first region comprises first and second layer-like portions, said first layer-like portion having a comparatively lower conductivity than said first first-type emitter region and said second layer-like portion having a comparatively lower conductivity than said first portion, said second **layer-like** portion being adjacent to said gate region and being spaced apart from said first first-type emitter region and

said second second-type emitter region by said first layer-like portion.

US6259348

1. A surface mount solid electrolytic capacitor comprising:

- a capacitor chip;
- an anode wire connected to a first portion of the capacitor chip;
- a safety fuse wire connected to a second portion of the electronic element;
- a resin package enclosing the chip together with the fuse wire and the anode wire;
- the resin package having a first end face and a second end face opposite to the first end face;
- the anode wire having an end face substantially parallel to the first end face of the resin package, the end face of the anode wire being exposed from the first end face of the resin package and plated with a metal;
- the fuse wire having an end face substantially parallel to the second end face of the resin package, the end face of the fuse wire being exposed from the second end face of the resin package and plated with a metal;
- the first end face of the resin package and the plated end face of the anode wire being commonly covered by a first **layer-like** terminal;
- the second end face of the resin package and the plated end face of the fuse wire being commonly covered by a second **layer-like** terminal; and
- the capacitor including no lead dedicated only for electrical connection.

US4458858

1. In a cassette of the type including a case, two spools rotatably mounted in aligned, axially parallel, spaced relationship within the case, a length of tape having opposite end portions helically wound in coils about the spools and having a portion extending therebetween, means on the case defining a path for the portion of tape extending between the coils, and a pair of shims of resilient elastic polymeric material on the opposite sides of said spools between said spools and said case, the improvement wherein said shims each comprise a first **layer-like** portion adjacent said spools and a

second layer-like portion adjacent said case with said first layer-like portion applying a stress in all directions along said second **layer-like** portion to form in the free, unassembled state of said shim a spherically convex outer surface on said first layer-like portion, said shims being resiliently deflected between said case and said spools to bias said spools to central positions therebetween.

US4494401

1. Pressure sensor to determine pressures within the combustion chamber of an internal combustion engine having a plug element including a ceramic portion adapted for introduction into the combustion chamber of the internal combustion engine,

- and a sensor element (13, 21) comprising a layer-like resistor made of a material which, under influence of pressure to which the resistor is exposed, changes its resistance, supported on the plug element
- wherein, in accordance with the invention,
- the **layer-like** pressure-sensitive resistor is formed as a layer on the surface of the ceramic portion of the plug element.

US4818596

1. An article which is rendered waterproof by a microporous memberane of a hydrophobic material, the pores of the membrane in a **layer-like** region on or towards a surface thereof being plugged with a hydrophilic material, leaving hydrophobic material exposed on the said surface between the pores.

US5434411

5. An infrared spectrum measuring apparatus comprising:

- a) an infrared radiation transmitting medium having a total reflection plane;
- b) means for generating infrared radiation and directing the same from the outside of the infrared radiation transmitting medium to the inside thereof so as to cause the infrared radiation to be incident on the total reflection plane;
- c) a metal layer;

- d) a spacer disposed between the total reflection plane and the metal layer for forming therebetween a **layer-like** space comprising means for holding a liquid sample and bringing the same into close contact with the total reflection plane and the metal layer,
    - (i) the thickness of the spacer being so set that the infrared radiation is transmitted through the liquid sample and partially absorbed by the same, and
    - (ii) the incident angle of the infrared radiation on the total reflection plane being so set that the partially absorbed infrared radiation is substantially total-reflected; and
- e) means for detecting the total-reflected infrared radiation.

US4489596

16. Spark plug according to ... (FIGS. 10 to 12; 15, 16) further including an electrical heater element applied, in **layer-like** form, to one of said at least one elongated insulated carrier elements;

- and wherein the heater element has a return connection line (24"/1L, 24"/2L) and is electrically connected to and forms part of a connection line for the ground or counter electrode (26"/4, 26"/5).

- 6. Spark plug according to ..., wherein the elongated insulated carrier element (37/1, . . .) is plate or layer-like, and said ignition electrode (25, . . .) comprises a conductive strip or track applied on a major surface of the plate or layer-like carrier element, and is carried thereby;
    - further including an electrical heater element applied, in **layer-like** form, to one of said at least one elongated insulated carrier elements;
    - and wherein all said heater element, sensor element, and the respective connection lines to the terminal end are in the form of layers, or flat strips or tracks.

US5128277

1. A method of manufacturing a conductivity modulation type semiconductor device, comprising the steps of:

- preparing a semiconductor anode substrate of a first conductivity type, having a first impurity concentration, and having first and second surfaces;
- preparing a semiconductor substrate of a second conductivity type having first and second surfaces, said semiconductor substrate having a **layer-like** region, with a second conductive impurity concentration, formed on said first surface thereof, said second conductive impurity concentration being lower than said first impurity concentration, and having a drain region, with a third impurity concentration, which is lower than said second impurity concentration, formed on said second surface thereof;
- joining said second surface of said semiconductor anode substrate to said first surface of said semiconductor substrate;
- heating said joined substrates to form an inversion layer on the side of said first surface of said semiconductor substrate by rediffusion of the impurities in said semiconductor anode substrate into said layer-like region, and a pn junction located between said **layer-like** region and said inversion layer;
- forming a body region of said first conductivity type in said drain region, said body region being exposed at said second surface of said semiconductor substrate;
- forming a source region of said second conductivity type in said body region, said source region being exposed at said second surface of said semiconductor substrate;
- forming an insulating layer on an exposed portion of said drain region, an exposed portion of said body region, and an exposed portion of said source region; and
- forming a gate layer mounted on said insulating layer, said gate layer extending above a portion of said body region which is between said source and drain regions.

US6140590

1. A stator winding insulation comprising: a mica band with at least one **layer-like** carrier composed of longitudinal threads having a first uniform cross-section and transverse threads having a second uniform cross-section different from the first uniform cross-section, and a mica-containing layer fixed to at least one face of the carrier with the aid of a binder, wherein, in the layer-like carrier the volume ratio of the longitudinal threads to the transverse threads is greater than or equal to 2.5:1, and wherein a weight ratio of the mica to the layer-like carrier in the mica band is greater than or equal to 6:1.

US5059001

4. A non-linear device for generating light of an angular frequency 2.omega. from incident light of an angular frequency .omega. by means of a non-linear optical effect, comprising:

- a substrate body comprising a material selected from the group consisting of a semiconductive material and an insulating material;
- an embedded member embedded in said substrate body and comprising a direct-transition type material, selected from the group consisting of a semiconductive material and an insulating material, different from the material comprising said substrate body, wherein said embedded member has a band gap Eg satisfying a relation Eg.apprxeq.2h.omega. in which h=h/2.pi. and h is Planck's constant, and has a size comparable to that of an exciton; and
- means for providing each of an electron and a positive hole in said embedded member with an asymmetric potential in such a manner that the wave functions of said electron and said positive hole have mutually different centers of gravity from each other,
- wherein said embedded member comprises plural **layer-like** shapes each having a thickness approximately equal to the Bohr radius of the exciton, said plural layers being alternately laminated with plural layers formed by said substrate body.

US4549430

3. Sensor according to ..., wherein the support carrier comprises an essentially cylindrical ceramic element (40) having a closed bottom region (41);

- and said conductor (21) comprises a conductive track or **layer-like** conductor applied to the bottom region of said cylindrical element.

US6055180

1. An electrically addressable device for at least one of recording, storage and processing of data, said electrically addressable device comprising:

- a functional medium in the form of a substantially **layer-like** continuous or patterned structure, the functional medium undergoing a physical or chemical change of state by a suitable energetic influence, the functional medium including a plurality of individually addressable passive cells provided in a two-dimensional pattern, the functional medium being realized as a homogenous or stratified structure comprising at least one substantially organic material, and a given physical or chemical state in a cell representing a recorded or detected value or are assigned a predetermined logic value for the cell, the cells being provided between the electrodes of an electrode means which directly or indirectly contacts said functional medium in each cell to effect a direct or indirect electrical coupling therethrough, whereby each cell can be supplied with electrical energy for detection of the physical or chemical state or a change in the physical or chemical state therein,
- a plurality of substantially parallel electric conductors being provided on each side of said functional medium such that overlying and underlying conductors intersect each other in a substantially orthognal mutual relationship, said electrode means for each cell being formed in an intersection point between a respective overlying and underlying conductor, such that said cells in said functional medium and assigned electrode means form the elements of a matrix whose rows and columns are defined by respectively the overlying and underlying electric conductors which

in the intersection points form the electrodes of said electrode means, that said functional medium in each cell having an overall non-linear impedance characteristic, and that said at least one substantially organic material of said functional medium being a polymer material.

US4743311

1. In a method for manufacturing a metallic part including the steps of:

- forming an intermediate product of at least a first alloy component in powder form and of a second alloy component in powder form wherein at least one of said first and second alloy components has magnetic properties and wherein each alloy component in the intermediate product has at least one dimension of not greater than about 1 um in extent, wherein said step of forming said intermediate product includes a compacting step;
- and transforming the intermediate product into a metal alloy part by a diffusion reaction at a predetermined elevated temperature;
- the improvement comprising:
- producing a crystalline mixture powder by milling a mixture of at least said first alloy component powder and said second alloy component powder and terminating the milling at a time at which the particles of the produced mixture powder are formed of a predominantly **layer-like** structure of the alloy components each layer of said layer-like structure having a thickness of said dimension of not greater than 1 μm;
- thereafter subjecting the produced particles of the mixture powder to a magnetic field at a time when the powder particles have mobility thereby aligning the powder particles by said magnetic field with the direction of said magnetic field coinciding with the direction of said compacting;
- ultimately effecting said compacting step by compacting and deforming the produced mixture powder of particles aligned by said magnetic field to form said intermediate product having a predetermined shape.

US4562028

1. A method for forming a shim adapted to be inserted between a case and side surfaces of spools in a cassette, said method comprising the steps of:

- providing a thin sheet of resilient elastic polymeric material having opposite surfaces;
- causing particles to impact at least one of the surfaces of the sheet until a **layer-like** portion of the sheet adjacent one of the surfaces applies a stress in all directions along a layer-like portion of the sheet adjacent the other of the surfaces to cause the sheet to bow uniformly; and
- cutting the sheet to form the shim.

US4437971

1. In combination with an exhaust system of an internal combustion engine having an exhaust component (E) subject to vibration,

- an electrochemical sensor to determine the oxygen content of gases, particularly of exhaust gases from an internal combustion engine, said sensor having
- a body (11) of solid electrolyte material;
- a layer-like porous measuring electrode (14) applied to a first surface region of the body;
- means including another surface region of the body defining a hollow chamber (21);
- a **layer-like** reference electrode (22) located on said other surface region of the body and positioned within the hollow chamber (21), said hollow chamber being open to ambient air, the oxygen of which providing a reference gas;
- and comprising
- movable granules (39) loosely retained and located in at least part of said hollow chamber (21) in which the layer-like reference electrode (22) is located, said granules being inert with respect to oxygen and having a surface hardness which is at least as great as that of the layer-like reference electrode (22).

US3945417

1. A vehicle tire of the lugged type, comprising:

- a carcass component having a substantially smooth outer circumference formed primarily of tread rubber material;
- a plurality of lug components spaced about and extending outwardly from said outer circumference of said carcass component, said lug components being formed of retread rubber material precured under heat and high pressure separately from said carcass component and having a greater cut and abrasion resistance than said tread rubber material of said carcass component;
- a **layer-like** mass of cushion gum material, having a minimum thickness of approximately three-eights to one-half inch, overlying substantially all of said circumference of said carcass component between said carcass circumference and said lug components in permanently bonded interconnecting relationship thereto; said cushion gum material having a faster curing rate and a greater flexibility than said rubber materials of said carcass and lug components, and said layer-like mass of said cushion gum material having been cured in situ between said carcass and lug components.

US5540047

7. The method according to claim 1, wherein a sensor element that is fashioned **layer-like** and that is contacted by an electrode pair is provided.

US5286582

1. A nonaqueous electrolyte secondary battery comprising: a negative electrode having lithium or a material capable of absorbing and releasing lithium as an active material; a lithium ion conductive nonaqueous electrolyte; and a positive electrode having an active material composed of a **layer-like** structure composite oxide

$Li_x M_y L_z O_2$ (1)

wherein M is one or more transition metal elements selected from Groups IIIB, IVB, VB,

VIB, VIIB and VIII of the periodic table and L is one or more elements selected from the group consisting of nonmetal, metalloid and semimetal elements selected from Groups IIIA, IVB and VA of the periodic table, alkaline earth metal elements and metal elements selected from Zn and Cu, and x, y and z are 0<X<=1.15 FONT < 0<=1.3"

US4710236

1. In a method for manufacturing an amorphous metal alloy body including the steps of:
   - forming an intermediate product of at least a first alloy component and a second alloy component in powder form wherein each alloy component in the intermediate product has at least one dimension of at most about 1 μm in extent said forming step including a compacting step; and
   - converting the intermediate product into a body having an amorphous metal alloy structure by a diffusion reaction at a predetermined elevated temperature;
   - the improvement comprising:

producing a mixture powder by milling a mixture of at least said first alloy component powder and said second alloy component powder and terminating the milling at a time so that the particles of the produced mixture powder are formed of predominately **layer-like** structures of said at least said first and second alloy components; and then effecting said compacting step by compacting and deforming the produced mixture powder to form the intermediate product having a predetermined shape.

In view of the changes to the claims and the remarks herein, the Examiner is respectfully requested to reconsider the above-identified application. If the Examiner wishes to discuss the application further, or if additional information would be required, the undersigned will cooperate fully to assist in the prosecution of this application.

Please charge any fee necessary to enter this paper and any previous paper to deposit account 09-0468.

If the above-identified Examiner's Action is a final Action, and if the above-identified application will be abandoned without further action by applicants, applicants file a Notice

of Appeal to the Board of Appeals and Interferences appealing the final rejection of the claims in the above-identified Examiner's Action. Please charge deposit account 09-0468 any fee necessary to enter such Notice of Appeal.

In the event that this amendment does not result in allowance of all such claims, the undersigned attorney respectfully requests a telephone interview at the Examiner's earliest convenience.

MPEP 713.01 states in part as follows:

Where the response to a first complete action includes a request for an interview or a telephone consultation to be initiated by the examiner, ... the examiner, as soon as he or she has considered the effect of the response, should grant such request if it appears that the interview or consultation would result in expediting the case to a final action.

Respectfully submitted,

By: _____

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